

ETHNOBOTANICAL STUDY OF MOST COMMONLY USED SPECIES OF STATE AZAD JAMMU AND KASHMIR

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ABSTRACT

Plants provide food, fodder, medicines, drugs and all other daily usage products directly or indirectly. An ethnobotanical survey was made on the State of Azad Jammu and Kashmir Pakistan to investigate local flora with respect to their usage and taxonomy. 30 most evenly distributed and commonly used species from three families i.e., Asteraceae, Amaranthaceae and Poaceae were taken in study, to convey the importance of local flora of AJK to the concerning people and departments. Plants were divided according to their number of uses by percentage and by presence and absence of other important properties. Asteraceae, Amaranthaceae both contain multi usage plants used as food, ornaments, drugs and medicines while Poaceae contain species, which are used as fodder and handicrafts. There is need for making policies for their conservation and preservation because; these species are facing heavy stress from both biotic (from Hakeems, Sanyasies, Gypsies and local inhabitants) and abiotic factors. Local people, government and semi-governmental departments need to cooperate with concerning people for the conservation and preservation of precious flora of AJK.

KEYWORDS: Ethno botany, Taxonomy, Asteraceae, Amaranthaceae, Poaceae, State of Azad Jammu and Kashmir

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INTRODUCTION

Ethno botany came into existence very long time ago, when man saw animals grazing and eating plants, then he starts gathering plants to fulfil his humanly needs i.e., to eat, make roof to protect himself from raining and hailing, to recover his wounds and cure the diseases. The perfect meaning of “ethno botany” is the study of plants and their effect on the human beings of very ancient times. “John Hershberger “was the very first in 1895 who used this term to study the botany of ancient and indigenous people. The knowledge of this field yields us with great amounts of profits in terms of food and medicines and much more. (Campbell et al., 2002). This is now dependent on the generations of ongoing time that whether they protect this knowledge and get their selves benefit from it or simply let this treasure of nature go from their hands by not paying attention on its collection and preservation from their fathers and forefathers. But, it is very sad to say that this knowledge of ethno botany is disappearing from this face of earth very speedily. Modernization is the main cause that is letting this destruction happen. Plants are source of food, medicines, drugs, fodder and other useful products for humans (Bussmann and Sharon. 2006). The present study of ethno botany is performed in the State of Azad Jammu and Kashmir. State of Azad Jammu and Kashmir is symbolising with heaven and paradise due to its beauty and can be located between 34°22’25 North latitude and 73°28’14 East longitude. Muzaffarabad is its capital; its total area is 13,297 square kilometres and the population is about 4-million. In most of areas, the mean rainfall exceeds 1400 mm, with maximum mean rainfall occurring near Muzaffarabad (around 1800 mm). Average highest temperature is 16°C to

24°C while the average lowest temperature is -4°C. State is furnished by God with rich flora of both medicinal and other commonly used plants (Bokhari et al., 2013). There are also present a large number of other plants, which are used as firewood, timber, food and fodder and also as drugs (Hussain & Khaliq et al., 1996). In terms to get medicine and other beneficial products from plants, whole plant or its various parts are used (Ishtiaq et al., 2010a, b). Topography of AJK is mainly hilly and mountainous with valleys and stretches of plains, and the area is full of natural beauty with thick forest and fast flowing rivers with winding streams. Mainly the rivers are Jhelum, Neelam and Poonch. The climate is sub-tropical highland type and the elevation ranges from 360 meters in the south to 6325 meters in the North.

MATERIALS AND METHODS

This study was conducted in the state of Azad Jammu and Kashmir Pakistan in 2015-17 on three families of vastly used plants; with ten species each (total 30 species). Present work includes the ethno botany and taxonomic study of plant of AJK. Plants samples were collected in their flowering seasons mostly in spring and autumn. Several surveys were made on weekly basis and study was based on 92 respondents including personal observations and informal discussion. Generations of modern time have left no interest with this knowledge of ethno botany, so the people of age above than 40 and less than 80 years were visited. Both open ended and close ended questionnaires were used for gathering data. The information collected includes the local name of flora, its medicinal use, the recipe preparation of plant, parts of plant use, fodder, food, handicrafts, pesticide and other traditional uses of plants. Collection of data was made in the local languages, because it was necessary to reveal the real knowledge of flora of AJK. The validity of the information collected is checked by cross referencing method. In the study, 114 hakims (herbalists) and 54 sanyasies we revisited for collection of data about medicinal value of plants. Local housewives gave information about vegetables and fodder Importance of plants. Moreover, gypsy and Nomadic were also visited to get information about handicrafts which they use to make from plants.

Identification of plant is done with the use of Flora of Pakistan. Plants collected were preserved with the standard process and placed in the herbarium of Department of Botany, Mirpur University of science & Technology (MUST) Bhimber Campus, Bhimber (AK) Pakistan for future reference.

RESULTS AND DISCUSSIONS

30 species belonging to 3 families 10 species each (total 30) are recorded in the table 1. With their scientific and local names, medicinal, fodder, food and handcrafting usage along with the parts of plant which are used. Main findings include that these species are being plucked at large scale by hakims, gypsies and local residents for drugs, medicines, fodder and food shown in **Table 1**. And, if this is continued at the same speed then the state of AK will soon be run out from its precious flora. This study will help to preserve and protect these species. The interesting findings are that species of Poaceae are mostly used as fodder and lake considerably medicinal and other properties.

Some species are used as vegetable e.g. *Silybummarianum* Gaertn, some are in use as fodder e.g. *Sonchus* as per (L.) Hill, some are used for making handicrafts e.g. *Arundodonax*L. some are used to are in use as medicines and drugs e.g. *Achyranthes aspera* L. and some species perform all of previously mentioned functions. g. *Taraxacumofficinale* Weber. The percentage of plants having role in medicinal fodder, handicrafts, ornamental, food, and harmfulness are 45%, 33%, 10%, 5%, 5%and 2 % respectively. Their percentage is also shown with the help of **Figure 1**. Species along with their properties (of usage) present and absent are shown in the **Table 2**.

Table 1: Showing Scientific and Local Names, Concerning Parts of Plants and Traditional usage of Plants

Asteraceae				
S. No	Species	Local Name	Parts Use	Traditional uses
1	<i>Calendula arvensis</i> L.	Gul e Asharfi	All Plant Parts	<ul style="list-style-type: none"> Plant is diaphoretic. Plant is antiemetic. Boiled concentrated liquor is used for the treatment of digestive ailments. It is too in use as ornamental plant.
2	<i>Parthenium hysterophorus</i> L.	Thandi Buti	All Plant Parts	<ul style="list-style-type: none"> Plant is as very dangerous weed. But even all parts are used against couple of diseases like rashes, diarrhea, dysentery and malaria.
3	<i>Saussurea heteromalla</i> (D. Don) Handel Mazzetti	Kuth	Seeds and Roots	<ul style="list-style-type: none"> Seed use as Carmina. Roots used in skin disorders
4	<i>Silybum marianum</i> Gaertn	Kandyara	Stem and Seeds	<ul style="list-style-type: none"> Plant is used in cardiac disorders. Stems are eaten as fresh vegetables. Roots are used to cure liver.
5	<i>Sonchus asper</i> (L.) Hill	Dodhal	All Plant Parts	<ul style="list-style-type: none"> Latex cure the warts. Paste of plant is applied on the wounds and on the boils too. Plant also acts as fodder.
6	<i>Taraxacum officinale</i> Weber.	Methi Hund	All Plant Parts	<ul style="list-style-type: none"> Leaves are in use as vegetables and salad. Boiled paste is given to the patients of stomach. It is also known to cure the jaundice.
7	<i>Tridax procumbens</i> L.	Kuthi	Leaves	<ul style="list-style-type: none"> This plant is anti-diabetic. It stops bleeding. Plant is anti-septic. It is also mosquitoes' repellent. It is also being in use as anti-parasitic plant.
8	<i>Xanthium strumarium</i> L.	Bakhra	Leaf	<ul style="list-style-type: none"> Leaf use to cure the chronic conditions of fever.
9	<i>Youngia japonica</i> (L.) DC.	Chirota	All Plant Parts	<ul style="list-style-type: none"> It is appetizer. It purifies blood and hence remove boils form skin.
10	<i>Sonchus asper</i> (L.) Hill	Pangdaru	Fresh Parts of Plant	<ul style="list-style-type: none"> It is fodder of cattle.
Poaceae				
11	<i>Arundodonax</i> L.	Narr	Whole plants	<ul style="list-style-type: none"> It is use to make the pen and kughookorrey (special toys). Also cure mouth and foot diseases.
12	<i>Avena fetida</i> L.	Gandail	Whole plants	<ul style="list-style-type: none"> Plants are fodder.
13	<i>Aristida adscensionis</i> L.	Saroot	Shoots	<ul style="list-style-type: none"> Shoots are use make wiper.
14	<i>Dichanthium annulatum</i> (Forssk.) Stapf	Marvel Grass	All Fresh parts	<ul style="list-style-type: none"> Plants is fresh fodder.
15	<i>Heteropogon controus</i> L. P. Beav	Suryalla Grass	Whole plants	<ul style="list-style-type: none"> Plant act mostly as fodder.

Table 1: Contd.,					
16	<i>Polypogon fugax</i> Nees ex Stued	Nika neela grass	Whole plants	•	Fodder of animals.
17	<i>Saccharum spontaneum</i> L.	Kai	Shoots are mainly used	• •	Shoots make ropes. Also fodder of animals.
18	<i>Sorghum halepense</i> (L.). Pers	Baru	Whole plants	• •	Place on the roofs for protecting rain drops to come in. Also, a fodder for cattle.
19	<i>Sporobolus coromandelianus</i> Retz.	tussock dropseed	All Fresh parts	•	fodder for cattle.
20	<i>Miscanthus sinensis</i>	Khotaa grass	Whole plants	•	Use for ornamental purposes.
Amaranthaceae					
21	<i>Achyranthes aspera</i> L.	Puthkanda	All Plant Parts	• • • •	It cures bronchitis. It is Carmina. It cures rashes. It also treats stomach.
22	<i>Aerva javanica</i> (Burm. f.) Juss. Ex Schult		Leaves and Seeds	• • •	It cures inflammation. Treatments of mouth and foot diseases. Green leaves cure digestive tract.
23	<i>Alternanthera pungens</i> Kunth.	Khaki booti/Itsit Te Phakra	Leaves and Roots	• •	Leaves purify the blood and hence removing boils from skin. it treats gonorrhea. Roots cure eye.
24	<i>Amaranthus viridis</i> L.	Ganar	All Plant Parts along with Roots	• • •	Plant is vegetable. It is also a fodder. Its liquor boiled leaves cure urination problems like inflammation of urinary tract.
25	<i>Amaranthus spinosus</i> L.	Kanda Ghanar	All Plant Parts	•	It treats over menstruation.
26	<i>Digera muricata</i> (L.) Mart.		Fresh Parts	•	Is fodder for livestock.
27	<i>Purpurea lappacea</i> (L.) Juss.	Lehdara	Leaves	•	Leaves cure cough.
28	<i>Boerhaavia diffusa</i> L.	Sanati	All Plant Parts	• • •	It cures eye rashes. It is magical antidiabetic plant. It is also a fodder.
29	<i>Amaranthus viridis</i> L.	Madangha	All Plant Parts	• •	It is used as anti-scorpion sting and anti-snake bite. Also, a fodder.
30	<i>Amaranthus graecizans</i> (Nevski) Gusev.	shabhaal	All Plant Parts	• •	Fodder for livestock. Petite people use to get chubby.

Table 2: Presence of Properties are Shown with + and Absence is Indicated by – Sign

Species	Food	Fodder	Traditional Uses/ Handicrafts	Medicines & Drugs	Ornamental	Dangerous Weed
<i>Calendula arvensis</i> L.	-	-	-	+	+	-
<i>Parthenium hysterophorus</i> L.	-	-	-	+	-	+
<i>Saussurea heteromalla</i> (D. Don) Handel Mazzetti	-	-	-	+	-	+
<i>Silybum marianum</i> Gaertn	+	-	-	+	-	-
<i>Sonchus asper</i> (L.) Hill	-	+	-	+	-	-
<i>Taraxacum officinale</i> Weber.	+	-	-	+	-	-

Table 2: Contd.,						
<i>Tridaxprocumbens</i> L.	-	-	-	+	-	-
<i>Xanthium strumarium</i> L.	-	-	-	+	-	-
<i>Youngia japonica</i> (L.) DC.	-	-	-	+	-	-
<i>Sonchus asper</i> (L.) Hill	-	+	-	-	-	-
<i>Arundodonax</i> L.	-	-	+	+	-	-
<i>Avenafetha</i> L.	-	+	-	-	-	-
<i>Aristidaadscensionsis</i> L.	-	-	+	-	-	-
<i>Dichanthiumannulatum</i> (Forssk.) Stapf	-	+	-	-	-	-
<i>Heteropogancontrous</i> L. P. Beav	-	+	-	-	-	-
<i>Polypogonfugax</i> Nees ex Stued	-	+	-	-	-	-
<i>Saccharumspontaneum</i> L.	-	+	+	-	-	-
<i>Sorghum halepense</i> (L.). Pers	-	+	+	-	-	-
<i>Sporoboluscoromandelianus</i> Retz.	-	+	-	-	-	-
<i>Miscanthussinensis</i>	-	-	-	-	+	-
<i>Achyranthes aspera</i> L.	-	-	-	+	-	-
<i>Aervajavanica</i> (Burm.f.) Juss. Ex Schult	-	-	-	+	-	-
<i>Alternanthera pungens</i> Kunth.	-	-	-	+	-	-
<i>Amaranthus viridis</i> L.	-	+	-	+	-	-
<i>Amranthusspinosus</i> L.	-	-	-	+	-	-
<i>Digeramuricata</i> (L.) Mart.	-	+	-	-	-	-
<i>Pupalialappacea</i> (L.) Juss.	-	-	-	+	-	-
<i>Boerhaviadiffusa</i> L.	-	+	-	+	-	-
<i>Amaranthus virdis</i> L	-	+	-	+	-	-
<i>Amaranthus graecizans</i> (Nevski) Gusev.	-	+	-	+	-	-

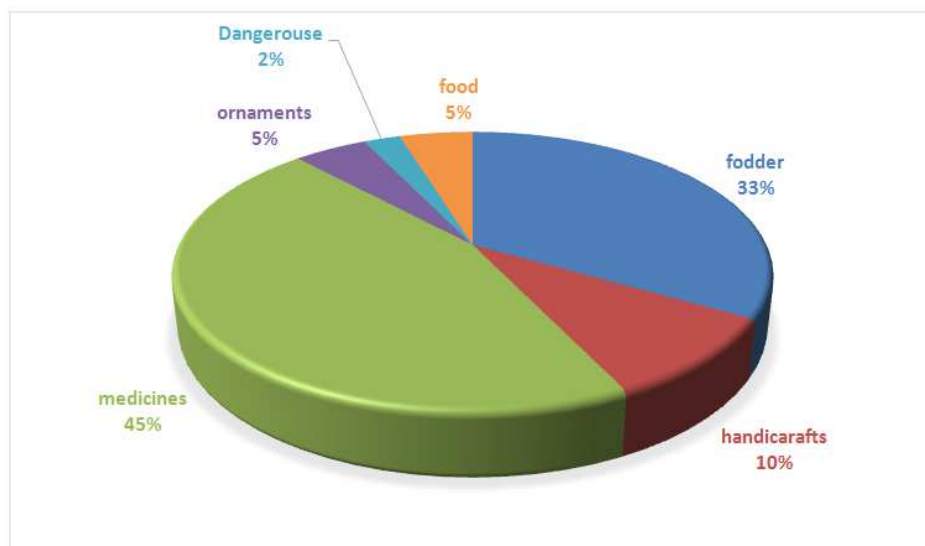


Figure 1: Showing Percentage of Usage of Plants

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